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## An interesting specimen of the Fragrant Shield Fern

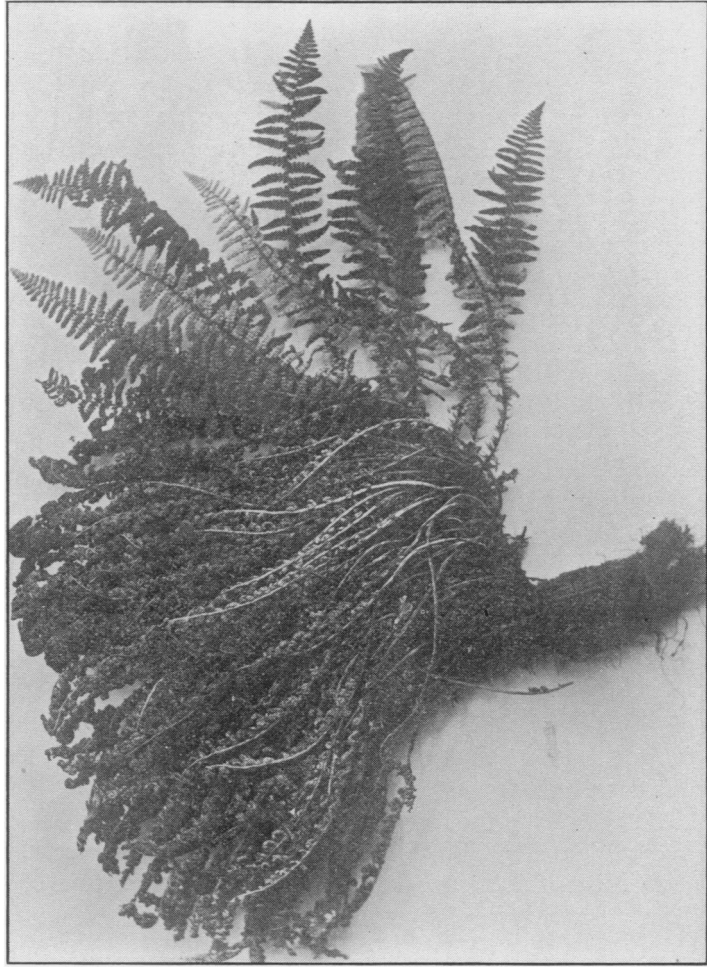
LEWIS S. HOPKINS

The following note attached by the writer to sheet number 7084 of Dr. Jennings' Ontario collection may be of sufficient interest to warrant its publication in the Fern Journal. The fern in question was collected August 19, 1914, on a steep diabase cliff on the south shore of north Ombabika peninsula, Lake Nipigon, Ontario.

*Dryopteris fragrans* (L.) Schott. (7084). This is a very remarkable plant in that it has about 120 (counted as accurately as possible without destroying the plant—a few did drop off) dead fronds and 10 mature live fruiting fronds—130 in all at the time of its collection. The five other specimens of this species collected on the present expedition show 5, 7, 9, 4, and 6 green fronds respectively, an average of about seven green leaves to the plant including the first plant.

Using this figure as the basis of the average annual leaf production, some of these dead fronds are at least 17 years old and the whole plant 18 years old. If it produced 10 fronds annually, they are 12 years old and the whole plant 13 years old. From these figures it seems perfectly reasonable to conclude that the oldest set of dead fronds is at least 15 years old.

But this is not all. The rootstock is about 12 centimeters long and for the first 5 centimeters it bears no dead fronds. The plant then grew 7 centimeters in 15 years, an average annual growth in the length of the rootstock of 0.466 centimeters. Since the root stock is 12 centimeters long this would make the age of the plant 25 years. But there is no means of knowing whether all of the rootstock was collected with the plant and if not how much is missing. The plant might easily be



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50 years old from the germination of the spore to the time of its collection.

It is not possible by this means to determine the exact age of the plant but there are two important as well as interesting points involved.

1. There is sufficient data to warrant the conclusion that the plant has lived quite a long time.

2. A plant which takes such precaution to retain its old leaves must certainly derive some benefit from them and it is not improbable that these dead leaves in the process of decay and under the influence of the warmth of the summer sun yield something that is of vital importance to the plant in its subsequent growth.

Commenting upon this note Dr. Jennings says: "I had not thought of any particular old age characteristics when I took that specimen from its home on the hot (on *that* day) dry cliff at the top of the talus slope. Now that I think of it I am sure that there could have been collected at that place others which would have shown almost twice as big a bunch of leaves. Whether these would really have been older or not I do not know. Perhaps they might have borne more leaves each year or have retained the old leaves longer but I am sure there were much larger bunches."

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### **Where *Ophioglossum* grows.** (A Multiple Report.)

As a result of my query about the habitat of *Ophioglossum* in the last number of the FERN JOURNAL for 1914, many interesting reports have come in and I am printing them just as received. In connection with these I am printing also the comment of D. C. Eaton in his "Ferns of North America" on the same subject. No matter how thoroughly one may have studied any particular fern of our Eastern states, it is always safe